

**TITLE OF THE ABSTRACT:**

COMPARISON OF USE OF LEVOBUPIVACAINE WITH DEXAMETHASONE VERSUS PLAIN LEVOBUPIVACAINE IN PATIENTS UNDERGOING FOREARM SURGERIES UNDER AN INFRACLAVICULAR BLOCK A DOUBLE BLINDED RANDOMISED CONTROLLED TRIAL

DEPARTMENT:

ANAESTHESIA, CHRISTIAN MEDICAL COLLEGE, VELLORE

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**BACKGROUND:** Regional neural blockade with local anaesthetic can reduce pain following orthopaedic surgery and result in greater patient satisfaction. Injecting local anaesthetic around the brachial plexus is useful in providing anaesthesia to patients undergoing upper limb surgeries. Infraclavicular block has been proven to be safe to perform and in efficacy compared to other approaches. Levobupivacaine is a long acting local anesthetic which is an S( -) enantiomer of bupivacaine with less cardiovascular and central nervous system toxic effects. Dexamethasone prolongs the action of local anesthetics.

**METHODS:** This was a randomized controlled double blinded study approved by the Institutional review board and ethics committee of Christian Medical College, Vellore. This study was registered under clinical trial registry of India. Block randomization was used.

Study was done among the patients who underwent forearm orthopaedic surgeries in Christian Medical College, Vellore between May 2016 to August 2016. Inclusion criteria: Age between 18-70yrs posted for forearm surgery, ASA I-III, weight greater than or equal to 50 kg. Exclusion criteria: Patients who are not willing for the block, patient's with coagulopathy, local infection over the block area, pregnant women, patients requiring general anaesthesia, patient's weighing less than 50kg, allergy to local anesthetic. A total of 40 patients of ASA (American Society of Anaesthesiologist) preoperative risk classification I, II and III aged between 18 years to 70 years were recruited in the study.

**STATISTICAL ANALYSIS:** Data was summarized using mean (SD)/ median (IQR) for continuous variables and frequency (percentage) for categorical variables. Independent test/ranksum test (continuous) and chi-square (categorical) tests were used to compare the baseline characteristics among the drugs. The outcome was defined as grade improvement from 3min to 20min. A chi-square test was performed to compare the improvement among drugs. A fisher exact test was used to compare the 3 min and 20 min grading among the drug groups. All the significance levels were kept for  $p < 0.05$ . All the statistical analysis was done using stataic 13.1.

**RESULT:** In this study we assessed 45 patients for eligibility to be included in the study. 5 patients were excluded as some of them did not fulfill the inclusion criteria and for some others there was a change in the operative plan on the day of surgery. Hence a total of 40 patients were recruited. Data collected from 40 patients was analyzed with 20 patients in one arm and 20 patients in another arm.

**CONCLUSION:** There was no statistical difference in the onset of sensory and motor blockade and in the duration of post-operative analgesia in the two groups: 0.5% Levobupivacaine with Dexamethasone and 0.5% Levobupivacaine with normal saline added in infraclavicular block in patients undergoing forearm orthopaedic surgeries. However there was a significant improvement in sensory grading of median nerve and ulnar nerve between a duration of 3 min and 20 min.(P value was 0.028 and 0.013 respectively) and also in motor grading improvement at 20 min duration (P value 0.025) in the group with 0.5% Levobupivacaine with 4mg of dexamethasone in comparison with the group with 0.5% Levobupivacaine with 1 ml of normal saline.

**KEYWORDS:** Levobupivacaine, Dexamethasone, Infraclavicular Block, Visual Analog Score, Forearm Surgery